

CLAIMS

I claim:

1. A foam concentrate comprising water and a high molecular weight acidic polymer (HMWAP) and a coordinating salt, the foam concentrate providing a fire-fighting composition when mixed with water so that the fire-fighting composition does not form a stable seal on cyclohexane and meets UL 162, Class B performance criteria for at least one of AFFF agents and fluoroprotein (FP) agents without requiring organic fluorine.

2. The foam concentrate of claim 1, further comprising:

at least one of a fluorochemical surfactant, an amphoteric hydrocarbon surfactant, an anionic surfactant, a nonionic surfactant, a foaming aid, a freeze protection agent, a sequestering agent, a buffering agent, a corrosion inhibitor, a polymeric film former, an antimicrobial agent, a preservative, a polymeric foam stabilizer and a polymeric foam thickener.

3. The foam concentrate of claim 1, wherein:

the fire fighting composition meets UL 162, Class B performance criteria for both AFFF agents and fluoroprotein (FP) agents without requiring organic fluorine.

4. The foam concentrate of claim 1, wherein:

the foam concentrate has a HMWAP content that provides the fire fighting composition with from about 0.01 to about 0.3% HMWAP by weight of the fire fighting composition.

5. The foam concentrate of claim 1, wherein:

the foam concentrate has a coordinating salt content that provides the fire fighting composition with from about 0.1 to about 1.5% of the coordinating salt by weight of the fire fighting composition.

6. The foam concentrate of claim 1, further comprises a fluorochemical surfactant, and wherein the foam concentrate has a fluorine content provided from the fluorochemical that provides the fire fighting composition with less than about 0.006% fluorine by weight of the fire fighting composition.

7. The foam concentrate of claim 1, wherein the foam concentrate is used in an amount of from about 1 to about 10 parts concentrate to about 90 to about 99 parts water to form the fire fighting composition.

8. The foam concentrate of claim 1, wherein the foam concentrate has a fluorine content that provides the fire fighting composition with less than about 0.002% fluorine by weight of the fire fighting composition.

9. The foam concentrate of claim 1, wherein the foam concentrate has a fluorine content that provides the fire fighting composition with less than about 0.001% fluorine by weight of the fire fighting composition.

10. The foam concentrate of claim 1, wherein the fire fighting composition has a spreading coefficient against cyclohexane of zero or less.

11. The foam concentrate of claim 1, wherein the foam concentrate has a HMWAP content that provides the fire fighting composition with from about 0.03 to about 0.2% HMWAP by weight of the fire fighting composition, and wherein the foam concentrate has a coordinating salt content that provides the fire fighting composition with from

about 0.12 to about 1.2% of the coordinating salt by weight of the fire fighting composition.

12. The foam concentrate of claim 1, wherein the coordinating salt includes those selected from salts and electrolytes of aluminum, antimony, barium, boron, calcium, copper, iron, magnesium, calcium, strontium and zinc.

13. The foam concentrate of claim 1, wherein the HMWAP includes those polymers having C4 to C22 alkyl branching and having an average MW of from 5000 or greater.

14. A fire fighting composition comprising water, a high molecular weight acidic polymer (HMWAP) and a coordinating salt, the fire fighting composition meeting UL 162, Class B performance criteria for at least one of AFFF agents and fluoroprotein (FP) agents without requiring organic fluorine and that does not form a stable seal on cyclohexane.

15. The fire fighting composition of claim 14, further comprising:

at least one of a fluorochemical surfactant, an amphoteric hydrocarbon surfactant, an anionic surfactant, a nonionic surfactant, a foaming aid, a freeze protection agent, a sequestering agent, a buffering agent, a corrosion inhibitor, a polymeric film former, an antimicrobial agent, a preservative, a polymeric foam stabilizer and a polymeric foam thickener.

16. The fire fighting composition of claim 14, wherein:

the fire fighting composition meets UL 162, Class B performance criteria for both AFFF agents and fluoroprotein (FP) agents without requiring organic fluorine.

17. The fire fighting composition of claim 14, wherein the HMWAP content is from about 0.01 to about 0.3% by weight of the fire fighting composition, and wherein the coordinating salt content is from about 0.1 to about 1.5% by weight of the fire fighting composition.

18. A method of extinguishing or retarding a fire comprising:

providing a fire fighting composition comprising water, a high molecular weight acidic polymer (HMWAP) and a coordinating salt, the fire fighting composition meeting UL 162, Class B performance criteria for at least one of AFFF agents and fluoroprotein (FP) agents without requiring organic fluorine and that does not form a stable seal on cyclohexane; and

applying the composition to an area where extinguishment or retardation of the fire is desired.

19. The method of claim 18, further comprising:

applying the composition to the area in combination with a dry fire fighting agent.